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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/553,107	04/20/2000	Edward S. Ellis	GJH-0018	4538

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EXAMINER	
JOHNSON, JERRY D	
ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/553,107	Applicant(s) ELLIS ET AL.
	Examiner Jerry D. Johnson	Art Unit 1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9-16,18 and 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-7,9-16,18 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

The Information Disclosure Statement filed June 17, 2003 has been considered. However, the cited reference (Monagle et al., U.S. Patent Application Publication 2003/0054087) bares little resemblance to the instant application and will not be made of record.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7, 9-16 and 18-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Harrison et al.

Harrison et al, U.S. Patent 5,292,428, teach a process wherein hydrocarbon feedstock is passed through two or more hydrodesulfurization zones and connected in a series each containing a packed bed of solid catalyst. The liquid is passed from the first zone to the next until the final zone. Make up hydrogen is supplied to a hydrodesulfurization zone (i) other than the first hydrodesulfurization zone; hydrogen-containing gas is recovered from each hydrodesulfurization zone. The first hydrodesulfurization zone is supplied with hydrogen-

containing gas recovered from a subsequent hydrodesulfurization zone (abstract). If the feedstock is, for example a diesel feedstock then the reaction conditions used in the process will typically be chosen to reduce the residual sulphur content to about 0.5 wt % S or less, e.g. about 0.3 wt % S or less, even down to about 0.05 wt % S or less and to reduce the aromatics content to about 27 volume % or lower, e.g. to about 20 volume % or less (column 9, lines 35-41). There will be used an amount of hydrogen which is equivalent to at least the stoichiometric amount of hydrogen required to desulphurise the feedstock and to achieve the desired degree of dearomatisation. Normally it will be preferred to use at least about 1.05 times such stoichiometric amount of hydrogen (column 10, lines 3-9). The process can be carried out in a plant having two hydrodesulphurisation zones or in one having more than two such zones, for example 3, 4, 5, or more (column 10, lines 22-25). Different hydrodesulphurisation conditions may be used in different zones (column 10, lines 26-65). In column 18 of Harrison et al, Tables 1-3, heavy gas vacuum oil feedstock having 2.23 weight % sulphur content is converted to a product having 31 ppm S and 15.9 vol % aromatics. Accordingly, Harrison et al teach a process and composition which reasonable appears to be either the same as or an obvious variation of the instantly claimed product and composition. Applicants' claims if not anticipated by 35 U.S.C. § 102, would be obvious under 35 U.S.C. § 103.

Claims 13, 14 and 15 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Pedersen.

Pedersen, U.S. Patent 6,461,497 B1, teaches a reformulated diesel fuel for a low-sulfur No. 2 diesel fuel providing reduced emission benefits (column 4, lines 23-28). The fuel has an aromatics content less than about 15 volume percent (column 5, lines 16-19). The fuel has a low

sulfur content which is suitably less than 15 ppmw but is preferably less than 10 ppmw and desirably less than about 5 ppmw (column 5, lines 30-32). The content of polycyclic aromatics is very low. Typically, the polycyclic aromatics content is no greater than about 1.5 weight percent and is desirably from about 0.1 to about 1.45 weight percent. Even more desirably, the polycyclic aromatic content is less than 1.0 weight percent (column 5, lines 39-42). The fuel desirably has a 10 volume percent boiling point of at least 430°F. and preferably from about 430 to about 450°F. (column 5, lines 56-58). Accordingly, Pedersen discloses a diesel fuel composition which reasonably appears to be the same or an obvious variation of the instantly claimed diesel fuel composition. Applicants' claims if not anticipated ay 35 U.S.C. § 102, would be obvious under 35 U.S.C. § 103.

Applicant's arguments filed June 17, 2003 have been fully considered but they are not persuasive.

Applicants argue that claim 1, as amended requires that the liquid stream exiting the first reaction stage have a sulfur level of less than 500 wppm and, therefore, "the amount of sulfur being passed to the second stage of the instant application is far less than that of Harrison" (Remarks, page 11). Applicants' argument lacks merit.

Harrison et al., column 12, lines 25-32, teach

> It is further preferred to monitor the sulphur concentration at the inlet end of at least one subsequent zone and preferably at the inlet end of each subsequent zone, and to bleed into the feed to that zone, if necessary, sufficient additional active sulphur-containing material to maintain the sulphur concentration within the range of from about 1ppm to about 1000 ppm, e.g. about 5 ppm to about 100 ppm.

Applicants argue "the recycle stream of Harrison would materially alter the instant invention" and point to Table 3 of Harrison as evidence thereof. Applicants' argument lacks merit.

The liquid recycle rate for Example 1 in Table 3 is "nil". Accordingly, Harrison et al. disclose a process without liquid recycle. Additionally, in column 15, lines 42-45, Harrison et al. teach that "the liquid recycle through the final hydrodesulphurisation stage of the plant can be with advantage be reduced or omitted, if very high levels of desulphurisation are desired. Accordingly, it would have been obvious to reduce or eliminate liquid recycle in order to increase the level of desulphurisation. Furthermore, the process of Harrison et al., even with liquid recycle, reduces the level of sulfur in a distillate feedstock having a sulfur content greater than about 3,000 wppm to less than about 1,000 wppm. e.g., about 5 ppm to about 100 ppm, in a first hydrodesulfurization stage and results in a liquid product stream having less than about 100 wppm sulfur (see Table 3, Example 2). Accordingly, the process of Harrison et al. fully meets the limitations of the instant claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry D. Johnson whose telephone number is (703) 308-2515. The examiner can normally be reached on 6:00-3:30, M-F, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Caldarola can be reached on (703) 308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-5408 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Jerry D. Johnson
Primary Examiner
Art Unit 1764

JDJ
August 11, 2003